



## SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:  
EP 22 84 98 36

**Classification of the application (IPC):**

*H04W 4/021, H04W 4/80, H04W 52/02, H04W 4/02, H04W 76/14, H04W 88/02*

**Technical fields searched (IPC):**

H04W

DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim
A	US 2012309409 A1 (GROSMAN YEFIM [US] ET AL) 06 December 2012 (2012-12-06) * paragraphs [0004], [0009], [0064] - [0082] *	1-15
A	US 2013093627 A1 (COSMAN STEPHEN JAMES [US]) 18 April 2013 (2013-04-18) * paragraphs [0017] - [0046] *	1-15
A	KR 20190003194 A (SAMSUNG ELECTRONICS CO LTD [KR]) 09 January 2019 (2019-01-09) * paragraphs [0084] - [0230] *	1-15

The supplementary search report has been based on the last set of claims valid and available at the start of the search.

Place of search Munich	Date of completion of the search 29 July 2024	Examiner Engmann, Steffen
---------------------------	--	------------------------------

### CATEGORY OF CITED DOCUMENTS

X: particularly relevant if taken alone	P: intermediate document
Y: particularly relevant if combined with another document of the same category	T: theory or principle underlying the invention
A: technological background	E: earlier patent document, but published on, or after the filing date
O: non-written disclosure	D: document cited in the application
& : member of the same patent family, corresponding document	L: document cited for other reasons

Disclaimer: this document has been automatically generated using data structured in accordance with WIPO standard ST.36 from the database of search reports of the European Patent Office. For technical reasons, its content and layout may differ from that of the original publication. Only the original published information is legally binding.



## ANNEX TO SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application number:  
EP 22 84 98 36

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on 29-07-2024.  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date	
US 2012309409	A1	06-12-2012	AU 2012262822 A1	12-12-2013
			BR 112013030585 A2	27-09-2016
			CN 103563406 A	05-02-2014
			DE 112012002346 T5	20-02-2014
			EP 2716079 A1	09-04-2014
			EP 3197184 A1	26-07-2017
			GB 2514866 A	10-12-2014
			JP 5770933 B2	26-08-2015
			JP 2014522599 A	04-09-2014
			KR 20140015527 A	06-02-2014
			US 2012309409 A1	06-12-2012
			WO 2012166356 A1	06-12-2012
			US 2013093627	A1
EP 2767125 A1	20-08-2014			
US 2013093627 A1	18-04-2013			
WO 2013056145 A1	18-04-2013			
KR 20190003194	A	09-01-2019	KR 20190003194 A	09-01-2019
			US 2019006891 A1	03-01-2019